RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

CGIAR CCAFS

The SmartAG Partner

CCAFS East Africa Bi-annual Newsletter

January - June 2019

Editing: Seble Samuel, Catherine Mungai and Maren Radeny
Design and Layout: Solomon Makau

Photo Credits: Cover page G.Smith (CIAT) Page 34. L.Cramer (CCAFS), S.Samuel (CCAFS), S.Partey (CCAFS) A.Virero (CCAFS), Back page: G.Smith (CIAT)

Contents

Message From
The Program Leader

We are pleased to share with you our SmartAg Partner newsletter, highlighting policy engagement and ongoing research from the first half of 2019.

We began the new year with the launch of two partnerships strengthening climate services in Rwanda, with the Department for International Development (DFID) of the UK Government and the International Fund for Agricultural Development (IFAD). As part of the Rwanda Climate Services for Agriculture (RCSA) project, we also marked the culmination of trainings in Participatory Integrated Climate Services for Agriculture (PICSA) in Rwanda, reaching all of the country's districts.

Climate and agricultural experts gathered in Nairobi to form the Multi-Stakeholder Platform to ensure the realization of Kenya's Climate Smart Agriculture Implementation Framework. Our scientists also joined the African Group of Negotiators Expert Support (AGNES) team in Nairobi to develop a continental submission to the UNFCCC on adaptation and resilience, soil systems and gender action.

We made big strides towards promoting climate-resilient livestock systems. Three Eastern African countries – Ethiopia, Malawi, Uganda – joined the Global Research Alliance on Agricultural Greenhouse Gases (GRA) to create low-carbon and resilient livestock systems. We also collaborated with key partners to develop robust measurement, reporting and verification systems to keep track of Ethiopia's livestock emissions and identify low-carbon development pathways.

In celebration of Africa Environment Day and Africa Day, we showcased the efforts of CCAFS and partners to bridge the agricultural gender gap and take agri-climate justice to the policy level across the continent.

We gathered with partners and farmers in Hoima Climate-Smart Village (CSV) in Uganda to develop resilient seed systems for East Africa that boost regional agrobiodiversity and the adaptive capacity of agricultural livelihoods. In addition, a delegation of farmers from our CSVs across East Africa shared their voices and experiences during Africa Climate Week in Accra, Ghana.

As part of our ongoing objective to actively involve youth in the agricultural sector, we co-hosted the online discussion and webinar - The Digital Revolution: Engaging Youth in Agriculture through ICTs about how young people use ICTs to innovate, address climate change and engage in agribusiness.

Read on for details from the first half of 2019 and please share this newsletter with anyone who might be interested.

Dr. Dawit Solomon

23 September 2019
New York

1

African negotiators talk adaptation tracking, soil fertility and gender

Country negotiators, agriculture and gender experts from across Africa met in Nairobi to develop a joint continental position for this year's climate negotiations.

By Catherine Mungai, Laura Cramer, Maren Radeny

Prior to each meeting of the United Nations Framework Convention on Climate Change (UNFCCC)'s Subsidiary Bodies on Scientific and Technological Advice (SBTSA) and Implementation (SBI), countries and observer bodies are invited to make submissions on pre-determined topics. This month, the Subsidiary Bodies met in Bonn, Germany, to discuss topics within the Koronivia Joint Work on Agriculture (KJWA) roadmap.

In May 2019, during the latest capacity building and strategy meeting of the African Group of Negotiators Expert Support (AGNES)* team, over 45 agriculture negotiators, including 23 gender negotiators and experts and key stakeholders with representation from 20 countries came together in Nairobi, Kenya. Over the course of two days, these negotiators debated key issues, learned negotiation skills, and crafted a joint submission that will represent the continental position on the following topics:

- Methods and approaches for assessing adaptation, adaptation co-benefits and resilience (2b);
- Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management (2c)

Assessing adaptation, adaptation co-benefits and resilience

Discussion amongst the meeting participants highlighted the current lack of existing methods to track and assess adaptation, adaptation co-benefits and resilience. Most existing frameworks are created at the project level and are not easily applied at the international or even national scale. Stocktaking of the gaps among existing methods and approaches was recommended to address this issue.

The draft submission also recommended developing an appropriate framework for tracking adaptation, adaptation co-benefits and resilience in the agriculture sector across scales for effective implementation of Nationally Determined Contributions (NDCs). The final recommendation was to facilitate international cooperation and support with regards to financial resources and capacity building to implement the framework.

Improved soil carbon, soil health and fertility

The discussion on this topic centered on the importance of soil mapping at appropriate resolutions for informing interventions at various scales. The group recommended that SBSTA and SBI be requested to develop guidelines for long-term assessment of soil carbon, soil fertility and soil health trends in different agricultural systems. In addition, the participants recommended the facilitation and mobilization of

A. Virero (CCAFS)

Africa's climate negotiators meet in Nairobi to craft a continental submission on adaptation, soil and gender to the UNFCCC

support for developing countries to access financial resources and capacity building. These will help facilitate the framework and the large-scale deployment of integrated soil, nutrient and water management technologies.

Review of the Gender Action Plan (GAP)

GAP, adopted at the 23rd session of the Conference of the Parties (COP23), aims to enhance the mainstreaming of gender across all UNFCCC negotiations streams and encourages countries to take deliberate steps in ensuring that gender considerations are mainstreamed into national climate policy processes. The African Working Group on Gender and Climate Change (AWGGCC)—the gender segment of AGNES—played a crucial role in the negotiations that led to the adoption of the GAP.

There is need to build the capacity of women negotiators to participate effectively in the UNFCCC, including enhancing the capacity of negotiators to articulate gender issues across climate discussions.

Next steps for AGNES

In addition to the draft submissions that were prepared, the attendees also discussed other next steps. AGNES will initiate a leadership program on climate science, diplomacy and negotiations in collaboration with selected universities across the sub-regions of Africa and other international universities. Plans are underway to formalize the agreements with hosting institutions.

There will also be efforts to strengthen the capacity of the Francophone countries to participate in UNFCCC negotiations through generating scientific evidence to support policy processes, and participation of negotiators in UNFCCC processes. A working group of African scientists focused on adaptation tracking is also being formed to contribute to these dialogues at the international level.

The meeting incorporated an overview by Dr. Marlies Craig, Science Officer for the Intergovernmental Panel on Climate Change (IPCC), on how to get involved as a reviewer in the next IPCC Assessment Report (AR6). This presentation came about due to concerns over a general lack of African perspectives in the IPCC reports and the need to have more African-led science included in the assessment reports.

**AGNES was created in 2015 to provide scientific expertise and evidence-based information to African climate negotiators. AGNES seeks to facilitate the exchange of ideas between experts and negotiators in an international setting. In this environment, scientific evidence is a major tool that AGNES uses to inform the unified common African position on matters related to climate change. Since its formation, AGNES has assisted the African Group of Negotiators (AGN) to develop and defend their position using science-based evidence on agricultural and gender issues.*

The two-day meeting was supported by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), African Group of Negotiators Expert Support (AGNES), the Food and Agriculture Organization of the United Nations (FAO), the International Development Research Centre (IDRC), the New Partnership for Africa's Development (NEPAD), the International Center for Tropical Agriculture (CIAT), Comprehensive Africa Agriculture Development Programme (CAADP-GIZ) Support Program, the World Bank, the World Agroforestry Centre (ICRAF) and the African Centre for Technology Studies (ACTS).

Catherine Mungai is the Partnerships and Policy Specialist for CCAFS East Africa. Laura Cramer is the Science Officer for the CCAFS Flagship on Priorities and Policies for CSA. Maren Radeny is the Science Officer for CCAFS East Africa.

2

Farmers from East African Climate-Smart Villages participate in Africa Climate Week

From East Africa to West Africa, farmers cross the continent and share their voices at Africa Climate Week in Accra, Ghana, in March 2019.

By John Recha

A delegation of six champion farmers from Kenya, Tanzania and Uganda Climate-Smart Villages (CSVs) of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) participated in the 2019 edition of the Africa Climate Week (ACW). Held in March in Accra, Ghana, the focal theme of the ACW centered around: ''Climate action in Africa: A race we can win.''

The ACW event was convened following the agreement of the Katowice Climate Package at COP24, in a new era of ambition – where all people, nations and organizations must come together to urgently increase action to meet the 1.5C temperature goal. ACW was therefore the launching pad of this new era, leveraging the power of cooperation and multilateralism, through finance, market mechanisms and technology.

The farmers from East Africa had the opportunity to share how they are forging the way ahead by advancing climate-smart agriculture (CSA) solutions that mitigate against, and adapt to, the impacts of a changing climate. They were also eager to learn more examples that were being showcased at the event.

Sharing perspectives from CSV farmers

"One of the biggest benefits of attending the ACW was the in-person access I had to experts. I learned about options for dealing with climate risks through conversation," said Evelyne Kugonza, a farmer and leader of the Hoima Community Seed Bank in Western Uganda. Likewise, getting to meet fellow farmers was an important opportunity as they exchanged ideas in farmer sessions. These focused on the role of small-scale farmer-driven initiatives in building positive, food secure and climate resilient futures across Africa.

"I tapped into fellow farmers to acquire more agricultural knowledge. While I have a few farming friends I can call in Nyando CSVs in western Kenya, expanding my network gave me access to more ideas for my farm," said farmer Hellen Were.

Key messages for scaling investment to harness resilience

Farmer Caroline Odera from Nyando CSV in Western Kenya was a panelist in the dialogue "Scaling up private sector investment that builds on resilience in agriculture, alongside eminent scientists and entrepreneurs". The three key messages and actions from the dialogue were the following:

S. Partey (CCAFS)

Farmers from East Africa Climate-Smart Villages, along with researchers, participate in Africa Climate Week in Accra, Ghana, in March 2019.

- Change research for development (R4D) and partnership to meet client-targeted needs. Participants called for a renewed R4D system, grounded in co-generation and inclusivity, and harnessing the important role of technology in building resilience for African agricultural systems.
- Targeted solutions for different agro-ecologies and farmer types, including social safety nets. Context-specificity is extreme in agriculture. To address this, technologies and market development must be highly tailored to specific agro-ecological zones and farmer types.
- Need for strong farmer organizations. African agriculture is smallholder driven with limited clout, voice and financial muscle, particularly for women and youth. There is a need for strong farmer organizations that link to private sector and value chain actors and influence policy at all levels to reduce farmer transaction costs and improve market information.

This session served as a platform to identify opportunities to increase ambition and African voices for climate action on agriculture and food systems, particularly for the upcoming Climate Action Summit and COP25. The event showcased resilience-building actions being taken by African grassroots communities and smallholder farmers and explored pathways to boost support at farm and ecosystem levels. Initiatives, policies, technologies and financial innovations were also explored as means to build agricultural climate resilience at scale across Africa.

Read more:

News update: Building resilience across East Africa one seed at a time: https://bit.ly/2m55gXY
News update: Addressing climate risks through improved potato production in Lushoto Climate-Smart Villages, Tanzania: https://bit.ly/2lG60Cz

John Recha is Participatory Action Research (PAR) Specialist for CCAFS East Africa.

3

Africa Day: Pushing agri-climate justice to the policy level in Benin, The Gambia and Kenya

Climate change doesn't just stay up in the clouds. Diverse African countries are grounding policies in agri-climate resilience across the continent.

By Dansira Dembele and Seble Samuel

As a continent, Africa's carbon footprint is miniscule, contributing between 3-4% of global emissions. In terms of climate vulnerability; however, the inverse is not true.

By next year, UN Environment predicts that due to climate change, 75 to 250 million people across Africa will be exposed to amplified water stress and rain-fed agriculture yields could fall by up to 50%. A damaging 2-4% annual gross domestic product (GDP) loss could accompany these climate threats in twenty years' time and up to USD 50 billion in climate adaptation costs by mid-century.

For the agricultural realm, this puts food security on the frontlines. How are these realities shaping policies on the ground? Take a look at the processes and movements in Benin, The Gambia and Kenya.

Benin takes important steps towards climate change adaptation

Benin's agricultural sector is feeling the full brunt of climate change. The country is exposed to droughts and floods that are increasing the threats to agricultural livelihoods. To adequately face the negative mid-century forecasts, major efforts are underway in the country regarding climate adaptation. Various national strategies, policies and programs are implemented to ensure agricultural development is strengthened.

The National Committee on Climate Change (CNCC), a multi-stakeholder platform in Benin, has been created to advance the country's institutional framework on climate change. The CNCC provides support in the formulation of both national and local policies and strategies for combating the negative impacts of climate change. A number of policies and programs related to climate change are being implemented in order to strengthen the resilience and adaptive capacity of food systems and water management:

- Environmental Action Plan (EAP)
- National action plan for the fight against desertification
- National forest policy
- Low carbon and climate change resilient development strategy 2016–2025

The Gambia commits to finding adequate climate solutions

Across The Gambia, climate change realities are characterized by increasing average temperatures and a rainfall regime that is decreasing in amount while increasing in variability, creating a permanent threat of decreased agricultural production and reduced food security. The Gambia CSA

K. Trautmann

Across the African continent, countries are laying the groundwork for climate policies to tackle a warming climate.

country profile demonstrates that mainstreaming climate adaptation and mitigation into agricultural and economic development policies will be a key factor in supporting the financing and adoption of climate-smart agriculture (CSA) practices on a large scale.

Calls to action from the international community, such as the United Nations Framework Convention on Climate Change (UNFCCC), have mobilized The Gambia's Ministry of Environment, Climate Change and Natural Resources to implement robust responses to climate risks. Currently, the country holds a draft climate change policy waiting for enactment by parliament as well as in the Nationally Determined Contributions (NDC) submission to the UNFCCC. The Gambia has put into place strategic policy instruments aiming to cope with climate change challenges:

- National Adaptation Programme of Action (NAPA)
- The Gambia National Agricultural Investment Plan

Kenya boasts a brand new CSA framework

Kenya generates nearly one third of its revenue from agriculture. The presence of longer and more frequent dry periods, mixed with shorter and erratic rainfall patterns, has led to livestock losses, crop failures and a struggle for livelihoods.

To surmount these challenges, Kenya's Ministry of Agriculture, Livestock, Fisheries and Irrigation (MoALFI) launched the Kenya Climate Smart Agriculture Implementation Framework 2018-2027 in October 2018. The strategy lays the groundwork for implementing CSA in Kenya, creating climate-resilient and low-carbon pathways for the country's food systems. This CSA policy comes into being against the backdrop of further climate and agricultural policies in Kenya:

- National Climate Change Action Plan (NCCAP)
- Agricultural Sector Development Strategy (ASDS)

To make it all happen, a multi-stakeholder platform is in the making. The participants are a force of interdisciplinary agricultural experts that coordinate and disseminate CSA planning and implementation across Kenya. This includes profiling the country's CSA interventions, strengthening the capacities of all stakeholders engaged in the CSA space, harnessing investment opportunities for CSA and supporting data gathering and generation to influence policymakers and decision making.

Read more:

CSA country profile: Climate-Smart Agriculture in Benin: https://bit.ly/2kqu4cy
CSA country profile: Climate-Smart Agriculture in The Gambia: https://bit.ly/2kByLAe
CSA country profile: Climate-Smart Agriculture in Kenya: https://bit.ly/293fCzm
News update: Kenya launches framework to implement climate-smart agriculture: https://bit.ly/2lGSFtI
News update: Stakeholders come together in Nairobi to create a vibrant platform for climate-smart agriculture across Kenya: https://bit.ly/2kcnMgu

Dansira Dembele is Communications and Knowledge Management Officer for CCAFS West Africa. Seble Samuel is Communications and Knowledge Management Officer for CCAFS East Africa.

4

Africa Environment Day: CCAFS highlights efforts to bridge the agricultural gender gap in Ethiopia, Mali, Rwanda and Senegal

To celebrate Africa Environment Day, CCAFS showcases its efforts to mainstream gender equality into climate-smart agriculture in Ethiopia, Mali, Rwanda and Senegal.

By Dansira Dembele and Seble Samuel

Agricultural livelihoods are the pulse of the African continent, bolstering national economies and dominating the labor force. The whims of the changing climate have complicated the quest for high yields, increased agricultural productivity and a reliable food supply. In this dynamic, while women make up a large portion of smallholder farmers across the developing world, they face multiple barriers in land ownership, access to resources and markets and the delivery of extension services. This dynamic has limited the meaningful participation of rural women and created profound gender yield gaps.

One thing is for certain: to achieve food security, we need gender equality. To promote gender equality across agricultural livelihoods, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) strives to mainstream gender-responsive climate-smart agriculture (CSA) strategies and practices. This Africa Environment Day, we celebrate CCAFS' efforts at the nexus of gender, agriculture and climate change in Ethiopia, Mali, Rwanda and Senegal.

Assessing gender-based needs for Ethiopia's climate-smart landscapes

Doyogena is the newest Climate-Smart Village (CSV) in Ethiopia. Located in the country's south, this once degraded landscape has benefitted from an alliance* implementing climate-smart interventions to enhance resilience in agricultural livelihoods.

In November 2018, CCAFS East Africa organized a field visit to Doyogena with multiple partners and institutes, centered on mainstreaming gender-inclusive strategies for scaling-up CSA across the climate-smart landscapes. To tackle such a dilemma, CCAFS and the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) are teaming up to ensure that gender equality and climate-resilient agricultural productivity become inseparable in Doyogena.

At present, a gender-based needs assessment is being conducted to evaluate how best to engage women farmers in CSA, create equitable gender representation, boost opportunities for women's economic empowerment and enhance their adaptive capacity to climate shocks.

Innovative market gardening paves the way for resilient livelihoods in Mali

Cinzana CSV in Mali is characterized by demonstration sites aiming to improve the knowledge of smallholder farmers and enable them to understand climate-smart practices that are locally appropriate. In addition to farm demonstration plots, market gardening demonstration plots exist for women

A. Eitzinger (CIAT)

Women represent a vital share of smallholder farmers across the developing world. CCAFS is working to bridge the agricultural gender gap.

farmers to experience innovative climate-smart technologies and practices.

CCAFS, in partnership with the World Vegetable Center and the Institute of Rural Economy (IER), has provided training for farmers on soil fertility management, water conservation and crop production. Female farmers have been exposed to varieties and technologies that were unknown to them beforehand.

Prior to the implementation of activities, women were accustomed to producing garden products only during the cold season, unaware that they could be produced during the rainy season as well. "During the rainy seasons, the water washes away the soil and our seedlings," said Mayama Yatoura, president of the women's group involved in market gardening. "This demotivated us a lot. In the CSV we learned about the new technique of raised gardening boards and our activities now continue all year long, allowing us to generate more income and improve our nutrition.''

Bridging the gender gap in agricultural extension services in Rwanda

> "I know where I come from. I know where I'm heading." Monique Mukabahizi, Farmer Promoter, Nyarugenge District

The above words came from Monique during a training about Participatory Integrated Climate Services for Agriculture (PICSA) in Kigali, Rwanda, in February 2019. She was recalling her previous harvests of poor yields and failed crops and was finally able to envision different possibilities by coupling current agricultural practices with weather and climate information.

The PICSA methodology facilitates participatory approaches between agricultural extension workers and farmers to evaluate historical climate data as well as analyze both seasonal and short-term forecasts to inform decision-making for farming livelihoods. Through the Rwanda Climate Services for Agriculture (RCSA) project, launched in 2015, the PICSA approach has now reached all of Rwanda's districts.

While women farmers rarely receive agricultural extension services on a global scale, the RCSA project, combined with the PICSA methodology, has been able to transcend this fate, harnessing the strong leadership of rural women, including farmer promoters, agronomists, socio-economic development officers, and of course, farmers themselves.

Baobab fruits to improve women's income in Senegal

In Senegal's Daga-Birame CSV, farmers have highlighted that droughts, floods and strong winds have sparked major challenges for their livelihoods. Alternative practices, such as harvesting and selling forest products have been increasingly applied to fill food gaps. However, this has prompted an unhealthy cycle of resource degradation.

In order to successfully cope with the continuous deforestation, women have been supported by the Building resilient agro-forestry-pastoral systems in West Africa through participatory action research (BRAS-PAR) project. The interventions focus on Baobab trees that are traditionally overharvested in Daga-Birame and their aim is to transfrom current practices into more sustainable ones.

Within this framework, the "one woman, one fruit tree" juice business was created to facilitate economic opportunities from agroforestry and increase nutrition as well. A women's committee focusing on the promotion of non-timber forest products was also established to process baobab fruit into powder with the goal of generating income and depositing the earnings into common village savings.

Efforts are also being made to protect existing trees and cultivate new ones. The women's committee has decided to find ways to increase the diversity of local fruit trees in their village. Along the way, they have introduced other drought-resistant fruit trees that offer income-generating opportunities, such as jujube, tamarind, guava and soursop.

**Doyogena CSV is a collaborative partnership between Inter Aide, the International Center for Tropical Agriculture (CIAT), CCAFS and the International Livestock Research Institute (ILRI), with support from the Feed the Future Africa RISING program of the United States Agency for International Development (USAID).*

The BRAS-PAR project is a coalition between CCAFS, the World Agroforestry Centre (ICRAF), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), the Senegalese Agricultural Research Institute (ISRA), the National Agency of Civil Aviation and Meteorology (ANACIM), as well as local partners.

Read more:

Blog: Africa's commitment to integrating gender in climate change adaptation policies and initiatives: https://bit.ly/2lKLf8G
News update: Gendering climate-smart agriculture in Doyogena, Ethiopia: https://bit.ly/2kAeivu
Brochure: Climate-Smart Villages: An AR4D approach to scale up climate-smart agriculture: https://bit.ly/2InwiUN
Brochure: West Africa Climate-Smart Villages AR4D sites: 2017 Inventory: https://bit.ly/2m84EAR
News update: New partnerships launched to bolster climate services in Rwanda: https://bit.ly/2m3ws9m

Dansira Dembele is Communications and Knowledge Management Officer for CCAFS West Africa. Seble Samuel is Communications and Knowledge Management Officer for CCAFS East Africa.

5

Stakeholders come together in Nairobi to create a vibrant platform for climate-smart agriculture across Kenya

Key stakeholders, active in Kenya's climate-smart agriculture space, gathered in Nairobi to create a platform for climate-smart actions in the country's agriculture sector.

By Laura Cramer, Catherine Mungai and Nancy Rapando

More than 30 agricultural experts gathered in Nairobi to create a dynamic and inclusive platform for exchanging information on climate-smart agriculture (CSA) activities in Kenya. The gathering was hosted by the International Livestock Research Institute (ILRI) on February 12, 2019. The participants came from diverse backgrounds including government, research, academia, development partners, non-governmental organizations, the private sector and civil society organizations.

This arrangement, currently known as the Multi-Stakeholder Platform (MSP), aims to facilitate the application of Kenya's Climate Smart Agriculture Implementation Framework (KCSAIF). This framework was launched by the Kenyan Ministry of Agriculture, Livestock, Fisheries and Irrigation (MOALFI) in October 2018.

To achieve the targets set out in the framework, Biovision Foundation and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) will collaborate with the Climate Change Unit of Kenya's MOALFI, along with other relevant stakeholders, to establish the MSP.

Creating the foundations to mainstream climate-smart agriculture in Kenya

Following a welcome by Dawit Solomon, CCAFS Regional Program Leader for East Africa, John Recha of CCAFS gave a comprehensive introduction to the concept of CSA so that everyone would be on the same page. Afterward, Lucy Ng'ang'a from the Climate Change Unit of MOALFI presented the concept of the platform

The principal aim of the MSP is to create a framework that facilitates the dissemination, coordination and sharing of CSA programmatic planning and implementation, as well as receiving and incorporating feedback from participating stakeholders. The MSP is grounded in the following objectives:

- Supporting the profiling of CSA actions and interventions in the country.
- Strengthening capacities of institutions in planning, implementation, monitoring and evaluation as well as reporting of CSA across stakeholders at all levels.
- Identifying opportunities for investment in CSA by platform members and others.

L. Cramer (CCAFS)

Participants at the platform launch discussing existing CSA practices in Kenya.

- Supporting the gathering of data to build an evidence base for decision making and policy development.

After the introduction, participants split into small groups to discuss the concept. The groups identified critical and missing elements, priorities as well as points requiring further specification.

Most groups proposed the inclusion of thematic working groups within the platform that would address sub-topics of specific interest. They also said that linkage with the counties needs to be sorted out because much of the implementation of the Kenya CSA strategy will happen at the county level. The importance of having an inclusive platform that takes on board the needs of youth, women and marginalized groups was also emphasized.

After a break, participants set up an initial stock-taking of on-going or recently completed CSA activities in Kenya that the participants were aware of. The information gathered forms the start of the first activity of the platform, profiling CSA initiatives in Kenya. This starting point shows what is happening already. It also allows for joint learning and avoids duplication of efforts.

At the conclusion of the meeting, several participants expressed interest in joining representatives from MOALFI-CCU, Biovision and CCAFS on the MSP interim steering committee to help continue guiding the design of the platform.

The next meeting will be held in a few months' time to agree on the design of the platform and move forward with the other planned activities.

The KCSAIF was produced by MOALFI in collaboration with the Ministry of Environment and Forestry with support from the Department for International Development (DFID), the United Nations Development Programme (UNDP) and the Food and Agriculture Organization of the United Nations (FAO). Grounding work for the product originates from the Integrating Agriculture in National Adaptation Plans project (NAP-Ag), the New Partnership for Africa's Development (NEPAD), the Common Market for Eastern and Southern Africa (COMESA) and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Read more:

News update: Kenya launches framework to implement climate-smart agriculture: https://bit.ly/2lGSFtI
News update: Kenya launches Climate-Smart Agriculture Strategy for 2017-2026: https://bit.ly/2kAUR5S

Laura Cramer is the Science Officer at the CCAFS Flagship on Priorities and Policies for CSA. Catherine Mungai is the Partnerships and Policy Specialist at CCAFS East Africa. Nancy Rapando is a Project Manager at Biovision.

6

Three countries in Eastern Africa join the Global Research Alliance on Agricultural Greenhouse Gases

Research findings on livestock greenhouse gas emissions in Eastern Africa are helping governments develop low-carbon and resilient livestock systems.

By Catherine Mungai, Maren Radeny, Seble Samuel, Hayden Montgomery and Dawit Solomon

Climate change is transforming the planet's ecosystems and threatening the wellbeing of current and future generations. To keep the increase in global temperature below 2°C and avoid dangerous climate change, reductions in global greenhouse gas (GHG) emissions are urgently required.

Globally, the livestock sector contributes a significant share to anthropogenic GHG emissions, but the sector also has the capacity to deliver a substantial share of the necessary mitigation effort. As such, low emissions livestock development offers countries an opportunity to achieve economic gains and respond to climate change simultaneously.

Three Eastern African countries join the Global Research Alliance on Agricultural Greenhouse Gases

African countries are taking ambitious actions towards reducing GHG emissions from agriculture. Ethiopia, Malawi and Uganda are now among the 56 countries and the first three in Eastern Africa who have joined the Global Research Alliance on Agricultural Greenhouse Gases (GRA). This development originates from discussions initiated during the regional awareness raising workshop: 'Low emissions livestock: Supporting policy-making and implementation through science in East Africa'. The workshop was held at the United Nations Economic Commission for Africa (UNECA) in Addis Ababa, Ethiopia, July 2-4, 2018.

The workshop focused on livestock production and the reduction of GHG emissions. It was organized jointly by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) in East Africa, the GRA, the Food and Agriculture Organization of the United Nations (FAO), the World Bank (WB), and the African Climate Policy Centre (ACPC) in collaboration with the governments of Ethiopia and New Zealand.

Transforming livestock stereotypes

Globally, especially in Africa, livestock plays an important role in supporting livelihoods, human health, nutrition and incomes. However, livestock is a major source of agricultural-related GHG emissions and the recent negative perception of the environmental impact of livestock production undermines its development potential.

The GRA, CCAFS as well as national and international partners have been working together to provide practical and science-based support to countries pursuing green growth through livestock. The group is also seeking opportunities to enhance cooperation and investment in research to help reduce GHG emissions from agricultural production. Additionally, the GRA

P. Casier (CGIAR)

Livestock is critical in supporting agricultural livelihoods. Three Eastern African countries have joined a global alliance to ensure this sector becomes climate-resilient and emits low amounts of greenhouse gases.

aspires to increase the potential of soil carbon sequestration as well as to improve efficiency, productivity, resilience and adaptive capacity of agricultural production systems.

Members of the GRA aim to deepen and broaden mitigation research efforts across the agricultural sub-sectors of paddy rice, cropping and livestock. Alongside, they coordinate cross-cutting activities across these areas.

Ethiopia, Malawi and Uganda are looking forward to working with other member countries to develop more efficient and sustainable agricultural systems to meet growing global demand for food in the context of a changing climate.

Read more:

News update: Using science to inform low emissions livestock policy development and implementation in East Africa: https://bit.ly/2lMKlIP

Catherine Mungai is Partnerships and Policy Specialist at CCAFS EA. Maren Radeny is Science Officer at CCAFS EA. Seble Samuel is Communications and Knowledge Management Officer at CCAFS EA. Hayden Montgomery is Special Representative at GRA. Dawit Solomon is Regional Program Leader at CCAFS EA.

7

Selective breeding manuals reveal best practices for livestock productivity

Community platforms in rural Kenya serve as the backbone for catalyzing innovative livestock interventions.

By John Recha

Two new manuals have been developed for livestock practitioners and development partners seeking to boost livestock productivity in pastoral communities through improved herd management. These modules are part of the Kenya Accelerated Value Chain Development (AVCD) program, a collaborative partnership between CGIAR centers, county governments, civil society, the private sector, and also supported by the United States Agency for International Development (USAID). The partnership strives to enhance agricultural enabling environments, expand markets and trade, and boost value chain productivity. Additionally, the program aims to improve and diversify both food access and behavior around nutrition.

The highlighted modules apply community-based interventions to add value to the sustainable production, marketing and management of sheep and goats. One remarkable practice is the crossbreeding of local breeds with improved breeds. It was introduced to enhance resilience by the International Livestock Research Institute (ILRI) through support from the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Mobilizing interventions at the community level

As the Module 2 manual highlights: "Community-based core innovation groups (CIG) form the backbone of the entire intervention. The CIG are common interest group platforms through which producers learn and practice improved herd management through adoption of selected technologies and mutual sharing of knowledge and skills. It is also through the CIG that the technology spreads among other producers and communities.

Through adoption of the practices presented in these modules, it is anticipated that the quality of animals, meat and milk products from local breeds of small ruminants raised in pastoral systems, results in increased resilience, improved incomes and improved nutritional status of pastoral households."

Adapting to adverse climates in Nyando

An example of a community that is adversely affected by climate change is the Nyando basin covering Kericho and Kisumu counties of western Kenya. Prolonged droughts followed by heavy and unpredictable rainfall that causes flooding have led to crop and livestock losses. In addition, poverty, loss of labor, less diversified livelihoods and land degradation increase the vulnerability of farming households in Nyando to climate risks, directly reducing household food supply and impacting their nutritional status.

To adapt to this challenging context, smallholder farmers in the Nyando basin are testing a variety of agricultural interventions that respond to climate-related risks. One such intervention is the introduction of improved breeds of indigenous small ruminants in an attempt to improve the

S. Kilungu (CCAFS)

Harvesting season in Nyando Climate-Smart Village, home to a mix of technologies tailored to boost farmers' ability to adapt to climate change, manage risks and build resilience.

productivity of the local Small East African sheep and goats. The improved breeds of Red Maasai sheep and Galla goats, introduced by ILRI and supported by CCAFS, are crossed with the local breeds to increase their resilience.

The small ruminants are important in ensuring food security under a changing climate as they provide the households with both nutrition and disposable income. Their small body size, flexible feeding habits and short generation intervals make them suited to climate risk management. Their low investment costs are affordable to the subsistence farmers and are often owned and tended by women and children.

Currently, the Galla and Red Maasai crossbreeds in Nyando represent about one-third of the total sheep and goats in the villages. At this rate, it is anticipated that the local breeds of sheep and goats will be replaced by new Galla and Red Maasai crosses in the future. This way many can benefit from the genetics of crossbreeds resilient to changing feed and water conditions in Nyando.

The Kenya Accelerated Value Chain Development (AVCD) Program is led by ILRI in partnership with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the International Potato Center (CIP). The manuals were made possible with support from the American people delivered through the United States Agency for International Development (USAID) as part of the US Government's Feed the Future Initiative.

Read more:

Website: Kenya Accelerated Value Chain Development (AVCD) Program: https://bit.ly/2m88n1j
Manual: Best practices for selective breeding for improved livestock productivity: Feed the Future Kenya AVCD Program Module 1 - Enquire: https://bit.ly/2kd0s2c
Manual: Best practices for selective breeding for improved livestock productivity: Feed the Future Kenya AVCD Program Module 2 - Engage: https://bit.ly/2kqJv4w

John Recha is Participatory Action Research (PAR) Specialist for the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) East Africa.

8

Tracking Ethiopia's livestock emissions to identify low-carbon development pathways

Key partners come together to develop robust systems for measurement, reporting and verification of emissions from Ethiopia's livestock sector.

By Seble Samuel, Julianna White and Dawit Solomon

Livestock for Ethiopia is both yin and yang. On the one hand, it represents a large portion of the country's economy and the source for agro-pastoral livelihoods; on the other hand, it causes a high percentage of the country's greenhouse gas (GHG) emissions.

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) along with partners from UNIQUE Forestry and Land Use, Ethiopia's Ministry of Agriculture (MoA), the Environment, Forest and Climate Change Commission (EFCCC) and the Global Research Alliance on Agricultural Greenhouse Gases (GRA) is working to strike a balance between these livestock dichotomies.

Representatives from these institutions gathered in Addis Ababa, Ethiopia, in March 2019 to plan a three-year project to develop a robust measurement, reporting and verification (MRV) system for GHG emissions from Ethiopia's livestock sector. Tracking these emissions will streamline the sector's reporting processes for Ethiopia's Climate Resilient Green Economy (CRGE) Strategy, which informs the country's Nationally Determined Contributions (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC).

A collaboration of government institutions, research organizations and development partners will provide technical support for improving Ethiopia's livestock GHG inventory and streamlining the data for CRGE reporting. This process will identify opportunities for substantial emissions reductions and provide a roadmap to achieving an increasingly low-carbon livestock sector.

To ensure the proposed MRV system is effective, comprehensive and well-coordinated, workshop participants identified solutions for current constraints to the MRV development process, as shown in the figure below.

Participants also identified key areas for capacity building:

- Refining CRGE scenarios, assumptions and calculation methodologies
- Developing Tier II factors (including country-specific emissions factors) related to dairy-cattle, beef feedlots, poultry and small ruminants
- Developing consistent excel tools and templates at regional and federal levels for MRV of priority activities with an interface to the Intergovernmental Panel on Climate Change (IPCC) software
- Addressing quality assurance and quality control procedures
- Creating a coordination platform to ensure coordination within the MoA and with international partners

A. Etzinger (CIAT)

Livestock are an inseparable component of Ethiopian agricultural livelihoods. Stakeholders come together in Addis Ababa to develop systems to measure, report and verify the emissions from this vital sector.

Moving forward, partners will develop a capacity building work plan to address these issues. The project partners have drafted a concept note to the Australian Centre for International Agricultural Research (ACIAR) to secure support for the MRV system. A Memorandum of Understanding (MoU) that outlines priority actions and means of collaboration will be created. Together, the partners are creating the foundations for a contextualized MRV system of Ethiopia's livestock sector.

Read more:

Website: MRV Platform for Agriculture: https://bit.ly/2EuUlxZ
Report: Measurement, reporting and verification of livestock GHG emissions by developing countries in the UNFCCC: current practices and opportunities for improvement: https://bit.ly/2keynaJ
Poster: Improved greenhouse gas emission factors for smallholder livestock systems in East Africa: https://bit.ly/2lLrT3y
Report: Using the CCAFS Mitigation Options Tool to identify mitigation co-benefits in Ethiopia's land use sector: https://bit.ly/2kHuzio

Seble Samuel is Communications and Knowledge Management Officer for CCAFS East Africa. Julianna White is Program Manager for CCAFS Low Emissions Development. Dawit Solomon is Regional Program Leader for CCAFS East Africa.

9

Scaling community-based sheep breeding for genetic improvement in Ethiopia

CCAFS is partnering with the International Center for Agricultural Research in the Dry Areas to scale-up community-based breeding in Southern Ethiopia.

By John Recha, Gebermedihin Ambaw, Aynalem Haile and Addisu Jimma Falita

Sheep are changing the lives of smallholder farmers in the Doyogena District of the Southern Nations, Nationalities, and Peoples' Region (SNNPR) of Ethiopia. The district faces climate related risks that include increasing rainfall intensity and variability, water stress, soil erosion, deforestation, severe land degradation and fragmentation, declining soil fertility, shortage of livestock feed, and increased incidence of crop and livestock diseases and pests.

To help farmers address these challenges, a strategic collaboration between the International Center for Agricultural Research in the Dry Areas (ICARDA), the International Livestock Research Institute (ILRI), and the University of Natural Resources and Life Sciences (BOKU), in partnership with the Ethiopian National Agricultural Research System, has been designing and implementing small ruminant community-based breeding programs (CBBP) on a pilot basis since 2010.

Scaling-up resilient improved breeds

Due to increased demand from farmers for resilient and improved sheep breeds, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) has partnered with ICARDA to upscale the community-based small ruminant breeding program in Doyogena. This process kicked-off with a field visit in November 2018, with the participation of smallholder farmers, Inter Aide, the Ministry of Agriculture and Livestock Resources (MoALR), and the Areka Agricultural Research Center. The scaling-up involves dissemination of improved genetics from established CBBPs to other communities in the district and the establishment of market linkages for breeding rams, sheep and their products.

Two villages were selected for gathering baseline data, including birth rate, age, dentition, weight, the total number of lambs born, and weaned lambs from existing ewes. By taking into consideration the number of ewes found in the villages, 20 improved breeding rams were acquired by CCAFS and ICARDA and distributed to the community through the breeder farmers cooperatives in October 2018. Through the cooperatives, other farmers from surrounding villages are learning about the benefits of improved rams and are purchasing these breeds, resulting in widespread adoption beyond the target communities.

Community-based breeding in Doyogena

The CBBP approach aims at genetic improvement of small ruminants. It considers farmers needs, perspectives, and active participation, from inception through implementation. The pilot phase has demonstrated that CBBPs are technically feasible, result in measurable genetic gains in performance traits and impact on farming livelihoods. The impact of the CBBP pilot phase is evident through:

G. Ambaw (CCAFS)

Inception field visit on scaling-up community-based breeding programs in Doyogena climate-smart landscape.

- Involvement of at least 3,200 households that have improved sheep in 40 villages.
- Change in farmer behavior: previously the "best" fast growing lambs were sold and slaughtered, known as negative selection; however, now they are kept for improving the breeding stock.
- Increased income from sheep production by an average increase of 20% in the households across three sites.
- Increased mutton consumption whereby an average of three sheep are slaughtered per family per year compared to one sheep in 2010 across three sites.
- High demand for breeding rams from neighboring communities, other government programs and development partners in all sites, proding the base for specific business models on breeding and artificial insemination.
- Mobilization of capital by breeding cooperatives to buy rams and establish sufficient feed, and build on the initial revolving funds supported by the project.
- Selection of the CBBP as a strategy of choice by the Ethiopian Government for genetic improvement of small ruminants as indicated in Ethiopia's Master Plan and Growth and Transformation Plan II (GTP II).

Delivering climate and food security benefits

The small ruminants are important in ensuring food security under a changing climate, as they provide households with both nutrition and disposable income. Their small body size, flexible feeding habits and short generation intervals make them suited to climate-risk management. Their low investment costs are affordable to subsistence farmers and are often owned and tended by women and children.

Read more:

News update: Implementing solar irrigation to achieve resilient livelihoods in Southern Ethiopia: https://bit.ly/2lMMvYX

John Recha is a Participatory Action Research Specialist for CCAFS East Africa. Gebermedihin Ambaw is a Research Associate for CCAFS East Africa. Aynalem Haile is a Small Ruminant Senior Scientist - Breeding and Genetics for ICARDA. Addisu Jimma Falita is a Livestock Research Coordinator for Areka Agricultural Research Center.

10

Building resilience across East Africa one seed at a time

Diversity builds resilience. This is true for all living forms; not least for the foundation of all life: seeds.

By Gloria Otieno, Tobias Recha, John Recha and Seble Samuel

The unrelenting midday sun filled the passenger bus as we completed the final stretch from Entebbe to Hoima. The field visit kicked off with Hoima's seed fair, gathering diverse climate-resilient varieties of saved seeds and bringing together international research centers and treaties, national gene banks and farmer associations from across Eastern and Southern Africa.

This excursion aimed to foster resilient seed systems across the region. It was held in Hoima, Uganda, one of the Climate-Smart Villages (CSVs) of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). The field visit and workshops were organized by Bioversity International, Community Technology Development Trust (CTDT) Zimbabwe, the Royal Tropical Institute (KIT) and Wageningen University (WUR) in March 2019.

S. Samuel (CCAFS)

Farmers visit the community seed fair in Hoima, Uganda.

The next stop on the field visit was the Hoima Community Seed Bank (HOCOSEB). The seeds filling HOCOSEB have been selected by farmers as best performing for agronomic traits including early maturity, higher yield, tolerance to water stress and pests. They also have a high resistance to diseases and are used to promote biological diversity and conservation. Hoima's seed bank, which was launched in August 2018, currently holds around 30 bean varieties, 23 finger millet varieties, two cowpea varieties and one pigeon pea variety, hailing from Kenya, Tanzania and Uganda. Women farmers are also keeping three local vegetable seeds at HOCOSEB, adapted to local conditions.

> "Hoima's community seed bank is connected to farmers rights to plant genetic resources." Gloria Otieno, Associate Scientist at Bioversity International, Uganda

Despite this progress, several challenges persist given that most of the seed bank's varieties are farmers' own selection, including limited access to good quality seeds with definite moisture content, capacity to germinate and high-performance levels.

Reviving indigenous seeds

One exceptional farmer overcoming many of these hurdles is Joy Mugisha, who began working with Bioversity International in 2008 and has been instrumental in improving agrobiodiversity in Southern Uganda. In 2016, she was

awarded Best Farmer in South Western Uganda, as part of Uganda's National Best Farm Competition* which highlights farmers who are transforming the country's agricultural sector in productivity, efficiency, sustainability and resilience.

Joy is working with 30 farmers who jointly created a community seed bank in 2016 which houses much of the region's genetic diversity. The seed bank includes beans, millet, bananas, maize, coffee, cassava, pumpkin, soya bean, groundnut, chia and amaranth. "Some varieties were getting rare and some varieties were no longer grown," commented Joy, "so we decided to mobilize seeds from different regions."

> "We are making sure the seeds don't get lost, especially the indigenous ones. We realized that some of the local varieties are disappearing. They are no longer grown. But they are resilient and nutritious. So we decided to grow them, to keep multiplying them, so they don't get lost anymore." Joy Mugisha, Joy & Family Demonstration Farm, Uganda

Boosting regional agrobiodiversity and adaptive capacity

The question is how to amplify such examples from community seed banks to model farmers. How can they transition from fragmented networks to levels of sub-regional exchange between Eastern and Southern Africa? Given the complementary agro-ecologies, such a model could provide a platform to share, combine and scale seed access, knowledge and networks to create resilient seed systems.

Such linkages are crucial under a changing climate in which planting, growing and harvesting conditions become increasingly volatile. "Over time, as a result of the changing climate, local communities will be increasingly dependent on traits that come from germplasm not necessarily from their local region," said Michael Halewood, Head of Policy at Bioversity International. Sub-regional approaches could therefore help to diversify food baskets as a strategy for food security and access diversity through both national genebanks and community seed banks. What's more, they can buffer agrobiodiversity loss associated with climatic changes.

S. Samuel (CCAFS)

Joy Mugisha at the Hoima farmer seed fair.

Resilient seed systems in East Africa project is supported by the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA) through the United Nations Food and Agriculture Organization (FAO), Bioversity International, National Agricultural Research Organization – Plant Genetic Resources Centre (NARO-PGRC) Uganda, European Union, Dutch Ministry of Agriculture, Nature and Food Quality.

**The annual award series is organized in partnership with the Development Finance Company of Uganda (DFCU) Bank, Vision Group, the Netherlands Embassy and KLM Airlines.*

Read more:

News update: The future of banking is in seeds: Hoima district establishes a community seedbank to strengthen farmers' adaptive capacity
News update: Seed networks for climate change adaptation in Kenya, Uganda and Tanzania
Blog: Open source seed systems for climate change adaptation in Kenya, Uganda and Tanzania: highlighting the importance of policy support

Gloria Otieno is an Associate Scientist with Bioversity International. Tobias Recha is a Research Associate at Bioversity International. John Recha is a Scientist at CCAFS East Africa. Seble Samuel is the Communications and Knowledge Management Officer at CCAFS East Africa.

11

Putting seasonal forecasts in the hands of Rwandan farmers

Seasonal forecasts equip Rwandan farmers with tools for informed agricultural decision making in the face of climate change.

By Yvonne Munyangeri, Maren Radeny, Desire Kagabo and Seble Samuel

"We started planting our crops in the first week of February!" exclaimed a farmers cooperative leader during the March to May (MAM) 2019 seasonal forecast meeting, organized by the International Center for Tropical Agriculture (CIAT) and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) in February 2019 in Kigali, Rwanda. This farmer's decision stemmed from his improved knowledge on climate information and seasonal forecasting, acquired through training sessions on Participatory Integrated Climate Services for Agriculture (PICSA).

Every season, the Rwanda Climate Services for Agriculture (RCSA) project participates in seasonal forecast meetings and commits to sharing the findings with the country's farmers cooperatives known as Twigire Muhinzi. The latest seasonal forecast review meeting for the MAM 2019 period brought together 28 participants from different partner institutions including CIAT, Meteo Rwanda, the Rwanda Agriculture Board (RAB), Caritas Rwanda, Développement Rural du Nord (DERN) and 16 cooperative leaders of the Post-Harvest and Agribusiness Support Project (PASP) cooperatives in Ngoma, Nyanza, Gatsibo and Rubavu districts.

Learning from past seasons, forecasting what comes next

The meeting opened with a review of the 2018 season which was followed by looking at the upcoming season. Meteo Rwanda verified the seasonal forecast from September to December 2018, revealing that the predictions had been 80% successful. As the focus shifted to the upcoming season, Meteo Rwanda shared local and context-specific forecasting for the MAM 2019 period including seasonal onset, total rainfall, cessation and length.

In an open discussion session, participants shared their impressions of the seasonal forecasts. "In Rubavu, in the volcanic region and near Lake Kivu, we sometimes have accidental rains and the weather changes in a short time! Could you also develop technologies that can help detect sudden and brutal heavy rains?" asked Mustapha, a farmers cooperative leader from Rubavu district, Western Province. "Technology exists that easily detects sudden weather events and the information is always provided to local extension agencies and warning departments across the country," advised the forecasting officer.

Connecting forecasts and farming

The seasonal forecasts were then linked to the agricultural realm, relating them to crop characteristics including days to maturity and water requirements to identify which crops are likely to grow well in the upcoming season. Since climate information is not the only factor determining the likelihood of growing a particular crop, the participants—all trained in PICSA—were given the responsibility to decide which crops

S. Samuel (CCAFS)

Sharing seasonal forecasts with farmers is vital for climate-resilient agricultural practices.

were suitable for their beneficiary farmers and cooperatives. This was based on the MAM 2019 forecast coupled with the geographical characteristics of their regions.

Participants brainstormed about various channels to disseminate the MAM 2019 seasonal forecasts to those who need it most: farmers. Local project partners decided to hold meetings with site representatives from all their districts and organize meetings at the sector level. These instances will bring together district and sector agronomists, socio-economic development officers and farmer promoters, to learn about and share seasonal forecasts to Twigire Muhinzi farmers cooperatives. Cooperative leaders agreed to hold weekly community meetings, known as Inteko Z'Abaturage, bringing together villagers and farmer group leaders.

Digital extension, using mobile phones and messaging, will also be applied to accelerate dissemination to farmers. The MAM 2019 seasonal forecast is expected to reach more than 100,000 farmers and agriculture extensionists through RCSA project partners and more than 3,500 farmers and extension officers through the PASP cooperatives.

Read more:

News update: New partnerships launched to bolster climate services in Rwanda: https://bit.ly/2m3ws9m
News update: Trainings in climate services for agriculture reach all of Rwanda: https://bit.ly/2m9iuDb
Research highlight: Leveraging climate information services to help farmers cope with climate change in Africa: https://bit.ly/2m9qqEn
Project newsletter: Rwanda Climate Services for Agriculture: Transforming Rwanda's rural farming communities and national economy through improved climate risk management: https://bit.ly/2kAzv8H
Presentation: Twigire Muhinzi national extension system: https://bit.ly/2m0u1nY

Yvonne Munyangeri is Project Assistant at CIAT-Rwanda. Maren Radeny is Science Officer at CCAFS East Africa. Desire Kagabo is Project Coordinator for RCSA at CIAT-Rwanda. Seble Samuel is Communications and Knowledge Management Officer at CCAFS East Africa.

12

Building the capacity of Ethiopian farmers in small ruminant management

Farmer trainings in Southern Ethiopia highlight best practices for improved small ruminant breeding and management.

By John Recha, Gebermedihin Ambaw, Tesfaye Getachew, Aynalem Haile and Addisu Jimma

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is partnering with the International Center for Agricultural Research in the Dry Areas (ICARDA) to upscale community-based small ruminant breeding programs. In Doyogena climate-smart landscape, Southern Ethiopia, demand driven training is undertaken to build the capacity of farmers on improved small ruminant breeding and management.

One such training took place in December 2018 with the collaboration of CCAFS, ICARDA and Areka Agricultural Research Center for two kebeles* in Doyogena. In this CCAFS intervention site, where adaptation practices are piloted to eventually scale for improved food security and resilience, 30% of the members are females. The training brought together champion farmers and focused on improved sheep breeding and management practices, including record keeping, measures for sheep selection, controlled mating and healthcare.

Record keeping for breeding management and economic benefits

Record keeping is a useful approach for decision making, keeping track of activities, monitoring productivity and documenting important on-farm events. The farmers were trained on the importance of keeping weight (birth weights, weaning weights and six-months weights), pedigree and animal health records. These records are important for evaluating the economic benefit of the herd, selecting animals for breeding, feed planning and disease management.

Objective measures for sheep selection

To avoid subjective selection of sheep for breeding, farmers were taught various objective measures for selecting animals. These include how to:

- Estimate the age of a sheep using its dentition
- Use chest girth and body length measurements to estimate the weight of sheep
- Select rams for breeding based on the observable characteristics of each animal resulting from the interaction of its genes with the environment
- Associate sheep size and age with productivity

Controlled mating for improved survival and growth

The farmers participated in an exercise of mapping the expected rainfall, lambing season and market demand across the year. Farmers were taught how to plan the sheep's mating depending on the seasons. It was emphasized that mating should be planned such that the animals give birth during the rainy season when there is enough pasture for the ewes to

G. Ambaw (CCAFS)

Farmers in Doyogena, Ethiopia climate-smart landscape are learning best practices to improve breeding and management of small ruminants.

produce milk. This will ultimately promote good growth and an improved survival rate among lambs.

Preventing animal disease through healthcare

To ensure the health of small ruminants, farmers were trained on how to identify symptoms of common sheep diseases, such as Ovine pasteurellosis, pneumonia, black leg, foot and mouth disease, mastitis, anthrax, fascioliasis and tapeworm. They were encouraged to use the affordable and legal public veterinary services provided by the Ministry of Agriculture (MoA), Areka Agricultural Research Center and private veterinary services.

It is hoped that the scaling-up process will address climate mitigation through farmer decisions to keep a low number of small ruminants, thereby reducing greenhouse gas (GHG) emissions. "Considering the fodder grasses that are planted on the soil and water conservation structures by farmers, the community will not face feed shortages. The flock size will be linked to the land carrying capacity, creating benefits of reduced GHG emissions," said Esayas Petros, an officer from Ethiopia's MoA.

CCAFS will continue partnering with like-minded organizations to support and promote evidence-based solutions for climate adaptation and mitigation.

Read more:

News update: Scaling community-based sheep breeding for genetic improvement in Ethiopia: https://bit.ly/2m9LRFa
News update: Selective breeding manuals reveal best practices for livestock productivity: https://bit.ly/2kjgxn2

John Recha is Participatory Action Research Specialist for CCAFS East Africa. Gebermedihin Ambaw is Research Associate for CCAFS East Africa. Tesfaye Getachew is Project Coordinator for Small Ruminant Research at ICARDA. Aynalem Haile is Small Ruminant Senior Scientist - Breeding and Genetics at ICARDA. Addisu Jimma is Livestock Research Coordinator at Areka Agricultural Research Center.

13

Farmers share experiences on community-based sheep breeding in Southern Ethiopia

A leading community-based breeding program shares learning experiences with women farmers in Southern Ethiopia.

By John Recha, Gebermedihin Ambaw, Tesfaye Getachew, Aynalem Haile and Addisu Jimma

Ethiopia's rural population depends on rain-fed, small-scale, subsistence farming for their livelihoods. Given this context, these agricultural systems are evermore vulnerable to climate-related risks. In Bonga, located in Southern Ethiopia, agriculture is the community's backbone, using mixed low-input crop-livestock farming systems. Sheep production is an integral part of the area's production system.

Community-based breeding programs (CBBP) are participatory farmer systems that allow for community ownership, design and implementation of breeding techniques and genetic improvement. They serve as important learning platforms for agro-pastoralist societies.

A decade ago in Bonga, the Boqa-Shuta CBBP was launched by the Bonga Agriculture Research Center, the International Center for Agricultural Research in the Dry Areas (ICARDA), the International Livestock Research Institute (ILRI) and the Austrian University of Natural Resources and Life Sciences (BOKU). This CBBP strives to address sheep breeding challenges such as shortages of breeding rams, inbreeding and negative selection.

To spread their reach, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), in collaboration with ICARDA, is establishing an all women CBBP in Doyogena climate-smart landscape in Southern Ethiopia. This CBBP aims to promote gender equality and enhance the adaptive capacity of livestock-based livelihoods.

Exchanging community-based breeding experiences for deeper learning

While Boqa-Shuta is one of the leading CBBPs in Ethiopia, Doyogena's CBBP is still in its early stages. Therefore, in February 2019, a learning exchange was organized between

G. Ambaw (CCAFS)

Farmers share insights during the learning exchange about small ruminant breeding and management in Ethiopia's Southern Nations, Nationalities, and Peoples' Region (SNNPR).

G. Ambaw (CCAFS)

Farmers learn from best practices for community-based breeding in Southern Ethiopia.

Doyogena's female farmers and Boqa-Shuta CBBP, so the former could learn from first-hand experiences about small ruminant improvement and management.

Boqa-Shuta CBBP has undergone quite a transformation. At its inception, Bonga's community breeding program had 67 male members, two female members and a budget of ETB 34,600 (about USD 1,200). Boqa-Shuta CBBP now has a membership of 334 farmers, 32 of which are women farmers, and a capital of ETB 1,100,100 (about USD 38,250). These farmers have observed a substantial improvement in sheep size and income, with sires weighing up to 67 kg and fetching ETB 6,700 (about USD 230) at market.

> "Sheep are like my mother and father. My life depends on sheep. They are a source of cash to meet my basic needs like food, clothes and medicine and to supplement crop production". Aselefech Yeshaw

The CBBP members now have breeding rams in their flock, are able to sell surplus livestock to surrounding communities and purchase educational supplies as well as housing materials for their families with the additional income. Members are also able to buy larger livestock such as oxen from the sheep sales. The female farmers from Doyogena village were inspired to replicate the efforts of Boqa-Shuta in their CBBP.

Boqa-Shuta could have benefited many more rural women if gender equity had been properly mainstreamed. Nonetheless, some women members of the CBBP have made impressive progress. Aselefech Yeshaw, a champion female farmer from Boqa-Shuta, has sold seven improved breeding rams and one ewe since joining the CBBP.

> "Bonga CBBP is one of the top performing CBBPs in Ethiopia. It's a good example for other countries too." Dr. Aynalem Haile, small ruminant scientist at ICARDA

This farmer to farmer exchange proved vital for equitable learning and to support Doyogena's CBBP in following in Boqa-Shuta's promising footsteps. The partner institutions are striving to make the CBBP gender-inclusive and the move towards the all women CBBP in Doyogena is an important step in that direction.

Read more:

News update: Building the capacity of Ethiopian farmers in small ruminant management: https://bit.ly/2lJzUG5
News update: Three countries in Eastern Africa join the Global Research Alliance on Agricultural Greenhouse Gases: https://bit.ly/2lJzZJT
News update: Scaling community-based sheep breeding for genetic improvement in Ethiopia: https://bit.ly/2m9LRFa
News update: Selective breeding manuals reveal best practices for livestock productivity: https://bit.ly/2kjgxn2

Gebermedihin Ambaw is Research Associate at CCAFS East Africa. John Recha is Participatory Action Research (PAR) Specialist at CCAFS East Africa. Aynalem Haile is Small Ruminant Senior Scientist - Breeding and Genetics at ICARDA. Tesfaye Getachew is Project Coordinator for Small Ruminant Research at ICARDA.

14

New partnerships launched to bolster climate services in Rwanda

Two new partnerships are deepening capacity and broadening the reach of agricultural climate services in Rwanda.

By Desire Kagabo, Yvonne Munyangeri, Gloriose Nsengiyumva, Alison Rose and Seble Samuel

Not having access to timely, location-specific climate information makes it very difficult for smallholder farmers to make informed decisions regarding their agricultural livelihoods. Since late 2015, the Rwanda Climate Services for Agriculture (RCSA) project has been enhancing the production of improved climate information, and training intermediaries within Rwanda's national extension service to bring this information to smallholder farmers. The project is supported by the US Agency for International Development (USAID).

RCSA uses the Participatory Integrated Climate Services for Agriculture (PICSA) approach to bring climate information to smallholder farmers. It also aims to empower them to make better decisions based on improved understanding of climate risks and their own goals. To date, over 1,000 government staff and volunteer farmer promoters have been trained. In turn, they have trained more than 100,000 farmers in the PICSA process.

A preliminary assessment during the first implementation season, based on a survey of 8% (randomly sampled) of the 2631 participating farmers, confirmed the effectiveness of PICSA. Most participants changed their management practices in response to the climate information and training (93%); perceived improvements in their confidence and their household food security and income; and shared information with an average of 13 peers.

New partnerships with the Department for International Development (DFID) of the UK Government, and the International Fund for Agricultural Development (IFAD) are now supporting the development of robust climate services across Rwanda.

Post-Harvest and Agribusiness Support project

In April 2018, the DFID-funded Post-Harvest and Agribusiness Support (PASP) project formalized a partnership with the International Center for Tropical Agriculture (CIAT) to embed climate services in farmer and agribusiness cooperatives, and in the Rwanda Youth in Agribusiness Forum (RYAF).

A. Nyandwi (MINAGRI Rwanda)

A farmer in Rwanda's Ngororero district speaking during a USAID visit to the Rwanda Climate Services for Agriculture project.

RYAF is a platform that brings together young entrepreneurs in agribusiness, aiming to positively change the way young people perceive the agri-business sector and encourage them to join other agricultural business-oriented groups for development.

The PASP aims to reach 32,400 households, or 155,518 individuals, with climate services. Considerable progress towards these ambitious targets has been made. Through PASP, CIAT has trained cooperative members and RYAF members in the PICSA process, including:

- 48 intermediaries from the leadership of 16 PASP farmer cooperatives across four districts
- 2,397 farmers (45% female) from these 16 cooperatives
- 73 RYAF members and 9 PASP staff

Weather and Climate Information Services for Africa program

In July 2018, the Weather and Climate Information Services for Africa (WISER) program launched a new partnership in Rwanda between the UK Met Office, the Rwanda Meteorological Agency (Meteo Rwanda), CIAT and the International Research Institute for Climate and Society (IRI) at Columbia University's Earth Institute. The program receives support from DFID. Still in its early stages, this dynamic partnership aims to enhance and scale up the co-production of climate services and impact-based early warning for improved climate-risk management in Rwanda. Activities will focus on:

- Enhancing the capacity of local government and Meteo Rwanda to co-produce and use seasonal climate information for agricultural planning
- Increasing access to timely impact-based early warning services (EWS)
- Supporting a functional multi-sectoral coordination committee to guide the co-production of effective climate services at national and local government levels

Television screens will be installed in the government offices of 70 sectors* identified as having high climate vulnerability. On the screens Meteo Rwanda Maproom products will be displayed in order to inform local government decision-making in these climate-sensitive localities.

Project activities will build on climate information products, tools and capacity developed by the umbrella RCSA project mentioned earlier. For instance, through CIAT, CCAFS developed a participatory monitoring, evaluation and learning (MEL) methodology. MEL will enable real-time feedback to adapt programming to local contexts, and support the dialogue needed to engage farmers and local government in the co-production of climate services.

Occurring alongside the foundational RCSA project, these new partnerships weave a common and reinforcing thread to create robust climate services across Rwanda. "The interconnections between these projects, building on a long trajectory, have made these partnerships a success," concluded Desire Kagabo, RCSA Project Coordinator.

**A Sector is the lowest-level government administrative unit in Rwanda, where local government plans are implemented.*

The Post-Harvest and Agribusiness Support Project (PASP) is funded in part by the UK Department for International Development (DFID) through the International Fund for Agriculture's (IFAD) Adaptation for Smallholder Agriculture Programme and led by the Rwanda Agriculture Board. The Weather and Climate Information Services for Africa (WISER) project is also funded by DFID through the United Kingdom Meteorological Agency. The Rwanda Climate Services for Agriculture (RCSA) project is funded by USAID/Rwanda and managed by CIAT.

Read more:

Project newsletter: Rwanda Climate Services for Agriculture: Transforming Rwanda's rural farming communities and national economy through improved climate risk management: https://bit.ly/2m3E9wg
News update: Youth, agriculture, and innovation: Building the capacity of young entrepreneurs to manage climate risks: https://bit.ly/2kAoVOU

Desire Kagabo is Project Coordinator for RCSA at CIAT-Rwanda. Yvonne Munyangeri is Project Assistant at CIAT-Rwanda. Gloriose Nsengiyumva is Project Outcome Coordinator at CIAT-Rwanda. Alison Rose is Science Officer for CCAFS Flagship on Climate Information Services and Climate-Informed Safety Nets based at IRI. Seble Samuel is Communications and Knowledge Management Officer for CCAFS East Africa.

15

Enhancing community resilience through planning for climate-smart agriculture, gender and nutrition

Highlights from a stakeholder validation workshop aiming to increase food and nutrition security in Uganda.

By John Francis Okiror

Stimulating the adoption of gender and nutrition sensitive climate-smart agriculture (CSA) requires policy action that aligns national agendas with implementation. The second phase of the Policy Action for Climate Change Adaptation (PACCA) project seeks to link CSA with gender and nutrition to solve challenges to food and nutrition security.

As part of the project, the International Institute of Tropical Agriculture (IITA) in collaboration with the International Center for Tropical Agriculture (CIAT) and the Mbale District Local Government (MDLG) organized a three-day stakeholder validation workshop in Uganda in January 2019 for researchers, district technocrats and politicians, civil society organization and farmer representatives. The goal was to identify key risks across the four main value chain commodities, relate these risks to underlying vulnerability factors of specific groups of people, and suggest adaptation options that address these vulnerabilities and risks.

Dilemma in prioritizing value chain commodities

Participants mapped the value chain commodities using existing literature and key informant interviews. The initial prioritization of the four key value chain commodities (poultry, onions, cabbage and ground nuts) was based on criteria related to resilience and/or climate stability, population involved (with special focus on women and youth) and whether the commodity was an important source of micronutrients.

However, the process of selecting the value chain commodities was contentious and lively discussions emerged as stakeholders strongly emphasized food security at the expense of resilience. George Wanakina, the District Production and Marketing Officer at MDLG, expressed concerns for the need to engage with value chain commodities that are beneficial socially, politically and economically. “From the four indicators used, which one is beneficial to Mbale?” Wanakina asked. “If you are talking of

N. Palmer (CIAT)

Bean is one of the four commodities workshop participants examined to suggest adaptation options that address vulnerabilities and risks.

food security and you take these priority value chains, you become food insecure."

Given that prioritization was done to balance both food security and resilience, new commodities, such as bananas, maize and beans made it to the priority list replacing poultry, cabbage and ground nuts respectively. However, some noted that although the priority value chain commodities were resilient and addressed nutrition security, they were not profitable. "Leaving out coffee is bothering my mind," Bernard Mujasi, the Mbale district Local Council V (LCV) Chairman said. "Coffee has to be there, whether it is resilient or not."

At the end of the workshop, stakeholders agreed on prioritizing banana, onion, maize and bean value chain commodities.

Underlying vulnerability factors

Special emphasis was put on identifying who are the most vulnerable to the risks affecting the value chain commodities. In terms of gender, age and economic status, the most affected groups included people living in poverty, youth, children, elderly people, people with disabilities, female-headed households, and households in exposed landscapes.

Workshop participants identified vulnerability factors such as climatic, biophysical, social, economic and institutional factors. Perceived vulnerability factors included the destruction and/or reclamation of water catchments, massive tree cutting for wood products, poor farming techniques, and human activity on steep slopes.

Adaptation methods to manage climate risks

Participants also mapped current adaptation options to manage climate risks and diminish vulnerability. Stakeholders identified value chain-specific on-going and new potential adaptation options to specific risks. Local adaptation and coping strategies included: planting crops like cassava that are not affected by strong winds, applying fertilizers at all stages of production, spraying with pesticides, terracing and purchasing improved seeds. They also added applying fungicides to preserve stored beans and reducing number of meals consumed by households.

J.F. Okiror (IITA)

Participants at the stakeholder validation workshop.

The workshop was divided into various sessions. Key activities included the validation of priority value chain commodities and socioeconomic context, the validation of historic climate and future projected changes in climate and related agriculture impacts, as well as the identification of risks and underlying vulnerability factors in each of the four priority value chain commodities, and the assessment of district-level organizational capacity to deliver adaptation programs.

The stakeholder validation workshop is one of the activities employed in the climate risk profiling approach developed by CIAT to support the World Bank Kenya Climate Smart Agriculture project. The climate risk profiling employed data collection methods involving literature review, district statistics, development plans, climate analysis, key informant interviews and focus group discussions with district experts and farmer representatives from Lukhonge and Bungokho Mutoto sub-counties of Mbale district.

The evidence generated will be used not only to develop the Mbale district climate risk and nutrition profile, but also for engagement through the climate change and nutrition learning alliance.

John Francis Okiror is the Communications Consultant at IITA.

16

Trainings in climate services for agriculture reach all of Rwanda

The final round of trainings in Participatory Integrated Climate Services for Agriculture culminate across Kigali districts of Rwanda.

By Seble Samuel and Yvonne Munyangeri

"The human body can predict. You can look to the sky and know it will rain. Now we've learned about climate histories of Kanyinya, and we can mix this with our own knowledge." Monique Mukabahizi, Farmer Promoter, Nyarugenge District

For thousands of years, traditional ecological knowledge alone was enough to read the winds, know the temperament of the rains, when to expect hot spells, when to plant and when to harvest. A surge of unpredictable heavy rains, prolonged dry periods and extreme weather events, heralded by a changing climate, have complicated the reliability of traditional knowledge systems alone to shape promising seasons for farmers' livelihoods. To complement these ancestral ecological ways of knowing, Participatory Integrated Climate Services for Agriculture (PICSA), developed by the University of Reading, facilitates informed decision-making by farmers by providing timely and location-specific climate information pertinent to agricultural livelihoods.

This integrative approach is being applied as part of the Rwanda Climate Services for Agriculture (RCSA) project, combining historical and forecasted climate trends, analysis of options and risks for different livelihood choices, and participatory seasonal planning tools for farmers. The RCSA project is coordinated by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and supported by the US Agency for International Development (USAID).

Making climate information a fluent part of farmers' vocabulary

In February 2019, Meteo Rwanda, the Rwanda Agriculture Board (RAB), the International Center for Tropical Agriculture (CIAT) and CCAFS gathered in Nyarugenge, Kicukiro and Gasabo districts of Rwanda's capital, Kigali, to facilitate week-long PICSA trainings to more than 200 participants, including 140 farmer promoters, 24 farmer field school facilitators, 30 socio-economic development officers, 3 sector agronomists and 3 district agronomists.

Since the RCSA's launch in 2016, PICSA trainings have been facilitated twice annually, before the start of each planting season. Culminating in Kigali and with the indispensable support of Caritas Kibungo,Caritas Kibuye and Caritas Butare, Développement Rural du Nord (DERN), CIAT-Rwanda and CCAFS, PICSA trainings have now directly reached more than 100,000 farmers and agricultural extension workers in all 30 districts of Rwanda.

The PICSA approach combines resource mapping, seasonal calendars, climate information from traditional and scientific knowledge systems, participatory budgets, short-term and seasonal forecasts to evaluate the opportunities and risks for farmers' crop, livestock and livelihood options. The application of these participatory methodologies aims to foster informed farmer decision-making and planning that enhances farmers climate resilience and adaptive capacity.

On the ground PICSA impressions

Each of the farmers and agricultural extension workers present during the PICSA trainings stood not only for themselves, but instead also represented village groups, each made up of 15-20 farmers, through the Twigire Muhinzi agricultural extension model.

> "I've learned how to determine if the rains will pour or fall gently, how to calculate gains and losses and how to predict before planting. I used to detect these trends by chance." Furaha Rwanyindo, Facilitator, Mageragere Site

S. Samuel (CCAFS)

Furaha Rwanyindo during trainings in Participatory Integrated Climate Services for Agriculture in districts across Kigali, Rwanda.

> "PICSA came on time. Forecasts, historical data, prediction: they were things I knew but didn't understand how to apply. Now I can share this with my neighbors so that others can see and learn." Mukamazimpaka Mwamimi, Farmer Promoter, Nyarugenge District

As a new set of agricultural extension workers have now been trained in participatory approaches to harness climate services, the RCSA project continues into its final year, guided by its central vision of ensuring Rwanda's farmers and livelihoods are resilient, adaptive and productive in the face of climate change.

Twigire Muhinzi is a 'home-grown solution' extension model to ensure that all farmers in Rwanda have access to advisory services. The model is based on two farmer-to-farmer extension approaches: the Farmer Promoter approach and the Farmer Field School approach. These appraoches have been used to communicate climate services for agriculture through PICSA to more than 100,000 farmers in Rwanda. Farmer promoters are voluntary proximity extension agents that coordinate agriculture practice demonstration and input supply at the village level. Farmer field school facilitators are voluntary extension agents that support activities of groups of 15-25 farmers.

Main partners of the RCSA project include Meteo Rwanda, Ministry of Agriculture and Animal Resources (MINAGRI), RAB, CIAT, International Livestock Research Institute (ILRI), World Agroforestry Centre (ICRAF), International Research Institute for Climate and Society (IRI) based at Columbia University, University of Reading, Radio Huguka, DERN, N-Frnds and Caritas Kibungo, Caritas Kibuye and Caritas Butare.

Read more:

Project newsletter: Rwanda Climate Services for Agriculture: Transforming Rwanda's rural farming communities and national economy through improved climate risk management: https://bit.ly/2kAzv8H
News update: News partnerships launched to bolster climate services in Rwanda: https://bit.ly/2m3ws9m
News update: Youth, agriculture and innovation: Building the capacity of young entrepreneurs to manage climate risks
Blog: Rwandan farmers share how climate information helps them improve food security: https://bit.ly/2kAoVOU
Press release: Rwanda Climate Services for Agriculture project awarded the first ever Climate Smart Agriculture Project of the Year 2018: https://bit.ly/2lKVz0s

Seble Samuel is the Communications and Knowledge Management Officer for CCAFS East Africa. Yvonne Munyangeri is Project Assistant at CIAT-Rwanda.

Out & About

1. Agricultural experts gathered in Nairobi on February 12, 2019 to create a dynamic platform for implementing climate-smart agriculture (CSA) in Kenya. 2. Farmer promoters, agronomists, farmers and socio-economic development officers received training on Participatory Integrated Climate Services for Agriculture (PICSA) across Kigali City districts in Rwanda in February 2019. 3. Participants of the resilient seed systems in East Africa workshop held in Hoima and Entebbe, Uganda from March 5-8, 2019. 4. Farmers from East Africa CSVs attend Africa Climate Week in Accra, Ghana in March 2019. 5. CCAFS staff were part of agriculture and gender negotiators from Africa gathered in Nairobi, Kenya on May 14 - 15, 2019 to prepare their submissions ahead of the SBSTA & SBI 50 taking place in June in Bonn, Germany. 6. CCAFS EA Regional Program Leader Dawit Solomon giving an address during the Global Challenges Programme (GCP) 4 in Addis Ababa June 12-14, 2019.

In our diary

September 5 2019
Nyando Community Seed Bank Launch
Venue: Kisumu, Kenya

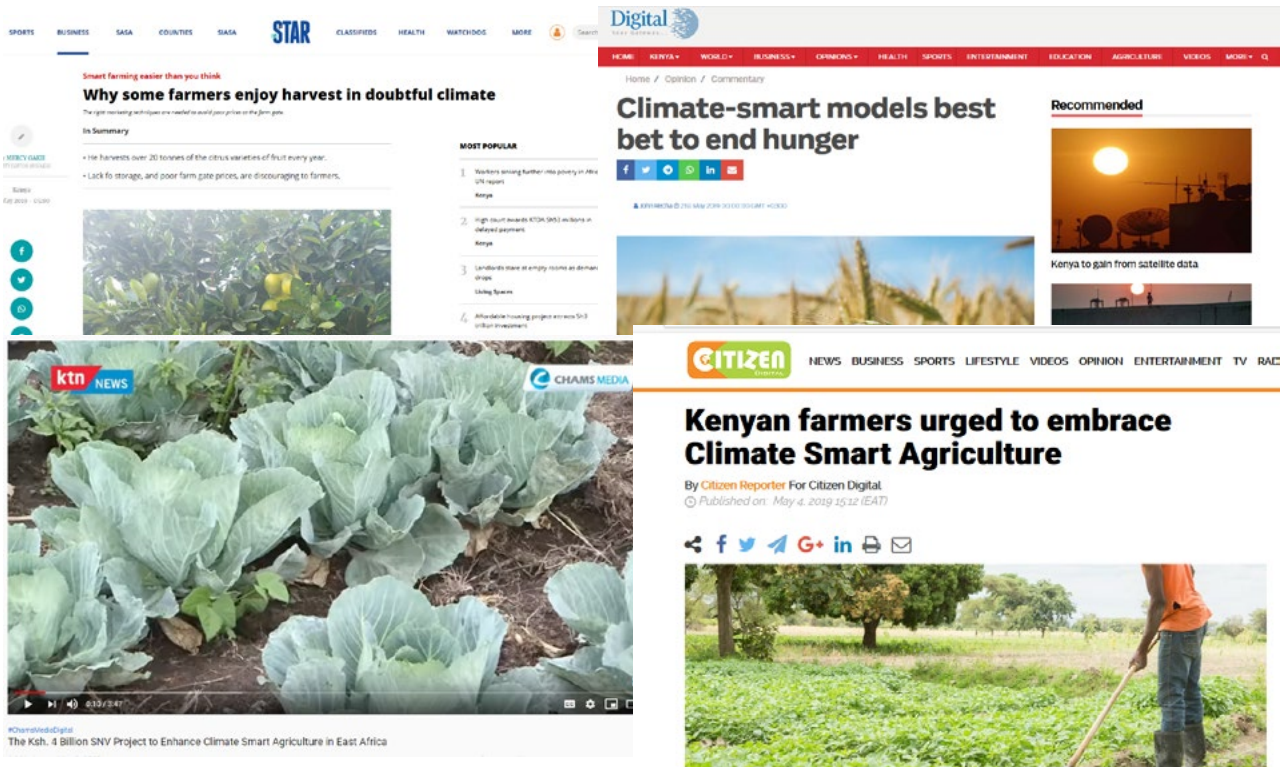
September 17 2019
Webinar: Linking climate change, gender and nutrition – Approaches, highlights and the way forward
Venue: Online

September 23 2019
United Nations Climate Action Summit
Venue: New York City, USA

October 8-10 2019
Global Science Conference on Climate-Smart Agriculture
Venue: Bali, Indonesia

December 2-13 2019
COP 25
Venue: Santiago, Chile

CCAFS EA in the media



Why some farmers enjoy harvest in doubtful climate | The Star: https://bit.ly/2lUEwte
Climate-smart models best bet to end hunger | The Standard: https://bit.ly/2miDes4
Small scale farmers in East Africa to Benefit from Sh4bn Climate-Smart Agriculture Project | Capital Business: https://bit.ly/2lVevJY
Why potato farmers need to move away from traditional farming | KBC: https://bit.ly/2lORgBA
Kenyan farmers urged to embrace Climate Smart Agriculture | Citizen Digital: https://bit.ly/2kNj1dl
The Ksh. 4 Billion SNV Project to Enhance Climate Smart Agriculture in East Africa | KTN News: https://bit.ly/2mbpCi7
Embracing Climate Smart Agriculture in Kitui County | CHAMS Media TV: https://bit.ly/2kKKjRL

Further Reading

CCAFS Latest Publications

Research paper: Understanding climate and land surface changes impact on water resources using Budyko framework and remote sensing data in Ethiopia: https://bit.ly/2kdKwwr

Report: Scaling up innovations in smallholder agriculture: Lessons from the Canadian international food security research fund: https://bit.ly/2kGHXTX

Project Report: Food & Business Global Challenges Programme GCP4 midterm workshop report: https://bit.ly/2kGHXTX

Info Note: Scaling up research-for-development innovations in food and agricultural systems: https://bit.ly/2kJrNZQ

Policy brief: Can Ethiopia feed itself by 2050? Estimating cereal self-sufficiency to 2050: https://bit.ly/2lJHfp7

Research paper: Estimating the economic value of climate services for strengthening resilience of smallholder farmers to climate risks in Ethiopia: A choice experiment approach: https://bit.ly/2m9XSdK

Info note: Testing a new model combining micro-finance and farmer training to upscale the adoption of climate-smart agriculture practices by small-scale farmers in developing countries: https://bit.ly/2lKKsoz

CCAFS Tools

CCAFS website and blog Updated daily with news on policy and practice, research, events and downloadable publications from the CGIAR and partners. http://bit.ly/1gX2uKi Blog: http://bit.ly/Blogs_EastAfrica

Adaptation and Mitigation Knowledge Network (AMKN) Map-based platform for sharing data and knowledge on agricultural adaptation and mitigation. http://bit.ly/AMKN_Maps

AgTrials Large public repository of agricultural trial data sets, with different crops, technologies and climates. http://bit.ly/AgTrials

Food Security CASE maps Map-based projections of crop area and yields, average calorie availability, and international trade flows across the world. http://bit.ly/Casemaps

MarkSim II Generator Future location-specific rainfall series, based on a choice of General Circulation Models: http://bit.ly/MarkSimGCM

GCM data portal Set of downscaled climate data sets. http://bit.ly/Climate_Data

Dataverse Public portal Full CCAFS data sets such as the baseline surveys from CCAFS East Africa sites that include information on farmers' current adaptive practices. http://bit.ly/Baseline-Surveys

Big Facts website Get all the links on climate change, agriculture and food security: http://bit.ly/1gYWjWt

Atlas of CCAFS sites Browse colorful maps of CCAFS research sites in three regions: East Africa, West Africa and South Asia: http://bit.ly/1iSfwHd

Core Sites in the CCAFS regions This portfolio includes brief descriptions of CCAFS core sites in East Africa, West Africa and South Asia, including coordinates of the sampling frames of the baseline surveys: http://bit.ly/1dKwrfG

Adaptation and Mitigation Knowledge Network Map-based platform for sharing data and knowledge on agricultural adaptation and mitigation: http://bit.ly/1kiEnng

Climate Analogues This is a tool that uses spatial and temporal variability in climate projections to identify and map sites with statistically similar climates across space and time: http://bit.ly/1pzmVhl

Climate and Agriculture Network for Africa This web-based platform seeks to link scientists with policy makers to address climate change, agriculture and food security issues in Africa. http://bit.ly/1BHmhG0

CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), East Africa.
P.O. Box 30709 - 00100 Nairobi, Kenya
Phone: +254 20 422 3000 Fax: +254 20 422 3001
Email: ccafsea@cgiar.org
Website: http://ccafs.cgiar.org/regions/east-africa
@cgiarclimate_EA
CGIARClimate
CGIAR Climate Change, Agriculture & Food Security (CCAFS)

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CCAFS

CCAFS East Africa is hosted by ILRI

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

Led by:

CIAT

Research supported by:

CGIAR Fund

European Commission

IFAD

Swiss Agency for Development and Cooperation SDC

UKaid from the British people

USAID FROM THE AMERICAN PEOPLE

Australian Government AusAID

Irish Aid

Ministry of Foreign Affairs of the Netherlands

Thailand (through the Department of Agriculture)

NEW ZEALAND MINISTRY OF FOREIGN AFFAIRS & TRADE MANATŪ AORERE